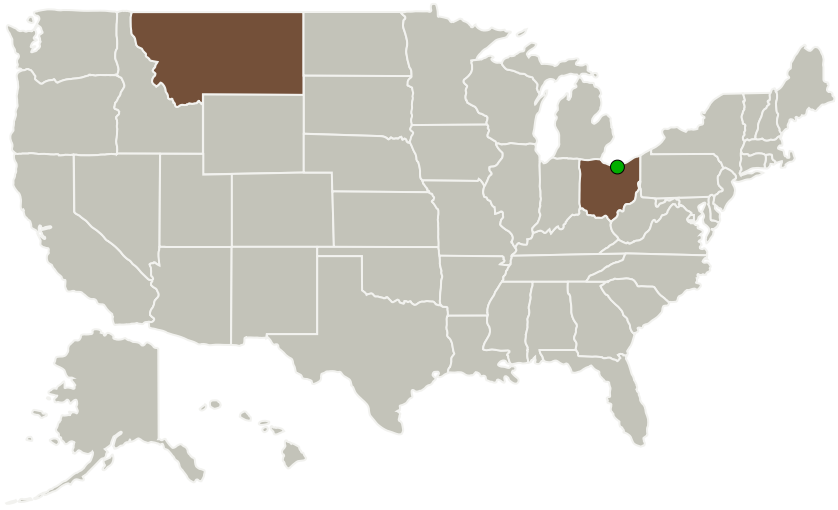
Cloud Liquid Water Content Sensor for Radiosondes, Phase I

Completed Technology Project (2011 - 2011)

Project Introduction

Icing is one of the most significant hazards to aircraft. There is still much research to be completed with regard to developing remote-sensing technologies for accurately identifying where icing conditions exist in clouds. There is a need to provide in-situ measurements of cloud liquid water content to validate the remote measurements. Anasphere, Inc. proposes to develop a modernized version of the classic vibrating wire cloud liquid water content sensor. This modernized version will apply updated technology to the measurement, and more importantly will add a droplet sizing capability that the original versions of these sensors lacked. It will be designed to be compatible with a wide variety of radiosondes. Phase I will see the development and laboratory testing of the improved probe, its incorporation into a droplet sizing system, and finally actual test flights into clouds. Phase II work will involve developing more precise calibration methods, improving manufacturability, and extensive test flights.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Anasphere, Inc.	Lead Organization	Industry	Belgrade, Montana
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio

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Primary U.S. Work Locations	
Montana	Ohio

Project Transitions

February 2011: Project Start

August 2011: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138035)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Anasphere, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

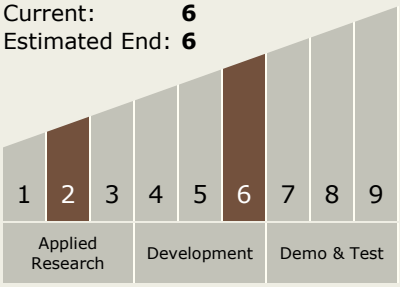
Carlos Torrez

Principal Investigator:

John A Bognar

Technology Maturity (TRL)

Start: **2**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.3 Aero Propulsion
    - TX01.3.11 Engine Icing

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System